News Release

Greenhouse Gas Research Takes to the Golf Course and the Athletic Field

*By ltollefs on Wednesday, September 3, 2014*Greenhouse gas research is a focus of Assistant Professor Katy Nannenga, who teaches environmental science at the University of Minnesota Crookston. In area fields, her work has gone on for almost a decade. Recently, however, the environmental science research has expanded into turfgrasses. There are two locations that are part of this study: the U of M Crookston football practice field and Lincoln Park golf course in Grand Forks, N.D.

Nannenga, along with Assistant Professor Kristie Walker, who teaches in the area of golf and turf management, have taken the research to an area golf course thanks to the connection Walker has to U of M Crookston alumnus Aaron Motl '06. Motl is the assistant superintendent of Lincoln Park Golf Course and has allowed Nannenga and Walker to conduct research this summer and last with the help of several undergraduates Amber Suchy, a senior majoring in biology from Vining, Minn.; Wade Wallace, a senior majoring in environmental science from Euclid, Minn.; Michael Laurich, a junior majoring in biology from Lansing, Ill.; Nate Harthoorn, a junior majoring in natural resources from Reasnor, Iowa; and alumna Missy Geiszler '14, Bachelor of Science degree in agronomy from Mayer, Minn.

At the golf course, there are three different areas that are part of the research project: the green, dry rough, and wet rough. Each week, samples are taken from these areas using collection chambers that are capped. The samples are taken through the caps using a syringe. Students take samples immediately after the chamber is set into the turf, and in two twenty-minute intervals following. Samples are transported back to the laboratory on campus for analysis.
Nannenga and Walker presented some of their findings in July 2014 in Osnabrueck, Germany, at the conference of the European Turfgrass Society. As part of this conference, they also published a peer-reviewed article in the European Journal of Turfgrass Science.
As the research continues through October, the data will be compiled and statistically analyzed to determine possible implications for the environment. Specifically, how cultural turfgrass management strategies on athletic fields and golf courses effect the environment.
One of the unique aspects of the research using an athletic field and golf course in the study is the quality and canopy greenness measurements of the turf. Current findings indicate water is a huge factor in greenhouse gas emissions, thus Nannenga and Walker are proposing a new project to evaluate water use in golf course management--a factor that has not been a part of the earlier studies conducted in small grain and sugar beets.
Today the University of Minnesota, Crookston delivers 29 bachelor's degree programs, 20 minors, and 36 concentrations on campus--as well as 13 degrees online--in the areas of agriculture and natural resources; business; liberal arts and education; and math, science and technology. With an enrollment of 1,800 undergraduates from more than 20 countries and 40 states, the Crookston campus offers a supportive, close-knit atmosphere that leads to a prestigious University of Minnesota degree. "Small Campus. Big Degree." To learn more, visit www.umcrookston.edu.
In the photos, top, right, are Nannenga, Harthoorn, Lauich, and Walker and in the photo, bottom, left, are Suchy, Nannenga, and Wallace.

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